REMARKS

Pending Claims

Claims 1-13 are pending. Claims 1-8, and 10-13 have been amended. No new matter has been added.

Claim for Priority

Submitted concurrently herewith is a certified priority document (JP 2003-181993) of a corresponding Japanese patent application for the purpose of claiming foreign priority under 35 U.S.C. § 119. An indication that this document has been safely received would be appreciated.

Claim Rejections Under 35 U.S.C. §102

Claims 1-13 are rejected under 35 U.S.C. §102(e) as being anticipated by Hotta, U.S. Patent No. 6,836,481. Applicants respectfully submit that claims 1-13 are not anticipated by Hotta and therefore request reconsideration of the rejection for the following reasons.

The embodiments of the present invention are directed to a multicast data distributing method, multicast gateway apparatus which transfers a data packet multicast from a source and addressed to a receiving terminal, router apparatus with a relaying function of a data packet that is multicast, an agent apparatus in a network to which a mobile communication protocol is applied, a service system which distributes information to a receiving terminal and a service method which distributes data multicast that is from a distribution server to a

receiving terminal. According to independent claims 1, 12 and 13, the receiving terminal does not support a multicast function.

For example, the terminal, e.g. mobile terminal 51 shown in Fig. 1, does not have a function to support a multicast function, such as a multicast function that receives multicast data. When the mobile terminal moves from a first network 61a to an adjacent (second) network 61b, a multicast gateway (first gateway 10a), which is located on a transfer path of a packet between the receiving terminal and a source 50, transmits information relating an address of the source and destination address information of the multicast data to a second gateway 10b. Second gateway 10b is located on a transfer path of a packet between the second network and the source. See Figure 1.

According to claim 1, the first gateway detects a data request packet sent from the receiving terminal, which is registered in the first network, to the source. The data request packet has an address of the receiving terminal and that address is retained at the first gateway. A registration message, which the receiving terminal issues to a second network is detected. A receive state information packet including information relating address information of the source and destination address information of multicast data is sent to a second gateway located on a transfer path of a packet between the second network and the source. Additionally, a distribution request packet of multicast data is sent from the second gateway to the source based on the receive state information packet that is received at the second gateway. Address information of the multicast data packet sent from the source is then converted to an address of the receiving terminal and then the multicast data packet is sent to the receiving terminal.

Support for claim 1 is found by referring to Figure 1, for example. A first gateway 61a is located on a transfer path of a packet between a receiving terminal and a source terminal 50, while a second gateway 61b is located on a transfer path of a packet between the receiving terminal and the source 50. When the receiving (mobile) terminal moves into the area of the second network, the transfer path of a packet between the receiving terminal and the source 50 via the first gateway is not formed. A registration message is issued to the second network when the receiving terminal moves into the area of the second network. As a result, the first gateway does not detect the data request packet from the terminal that is sent to the source, but rather detects the registration message issued to the second network from the terminal. Claim13 include similar claim language and is therefore supported in the same manner.

Independent claim 12 includes claim limitations setting forth a distribution server (source), a home agent (first network), a foreign agent (second network), and first and second multicast gateway apparatuses, respectively located on the communication path between the home agent and the distribution server, and the communication path between the foreign agent and the distribution server. The claim language of claim 12 is therefore supported in a manner similar to that of claim 1.

Independent claims 2, 6 and 10 have in common a packet discrimination part which discriminates a kind of the received packet, an access terminal management table which, when the received packet is an access request packet to a source of multicast data, retains an address of the receiving terminal which is a source of the received packet. A receiving terminal management table is set forth which, when the received packet is a registration

request packet of a receiving terminal, retains the address of a moving destination of the terminal included in the registration request packet. Further a data transfer processing part is claimed which, when the received packet is a data packet that is multicast, sets an address of a moving destination of the receiving terminal as a destination address for the received data packet referring to the access management table and the receiving terminal management table. Each of claims 2, 6 and 10 also includes a unit for sending a data packet with the address set to the receiving terminal. See Fig. 2 and the description on page 19, lines 7+, for example.

Hotta discloses a method and apparatus for performing a packet conversion in order to realize the multicast communication via a network that does not cope with multicast communication. The server-side gateway 13 converts multicast data sent by the server 10 into unicast data and sends the data to the client-side gateway 11. Then, the client-side gateway 11 converts the unicast data sent from the client-side gateway 13 into multicast data to be sent to the client 14. In Hotta, the server-side gateway 13 sends information to the client-side gateway 11 that is necessary for the client-gateway 11 to convert the unicast data receives from the server-side gateway 13 into multicast data. (See phase 3 of Figure 8; Figure 5, and column 6, lines 19-32 of the reference).

Hotta does not suggest sending information relating the address information of the source and the destination address information of the multicast data from a first gateway to a second gateway, as set forth in claims 1 and 12 (transfers address information of the distribution server and home address information of the receiving terminal to the second gateway, according to claim 12). Hotta discloses two gateways 11, 13 that always are located

on the multicast data transfer path between the client 14 and the server 10, as shown in Figure 5. Hotta does not disclose a client which is a mobile terminal moving between networks, as in the claimed invention of claims 2, 6, 10 and 12. Thus, the client only transmits a data request message according to Hotta.

In the embodiments of the present invention, a first gateway detects a data request packet sent from a receiving terminal registered in a first network to the source. On the other hand, in Hotta, as shown in Figure 8, phase 2 shows a message sent to a gateway 11 from the gateway 13 when the gateway 13 receives the message of phase 1. Gateway 13 does not detect a reception request from client 14 in a manner similar to that provided in the embodiments of the present invention. That is, in Hotta, phase 1 of Figure 8 is a reception request that is first sent from the client 14 to the gateway 13. Accordingly, Hotta does not anticipate or fairly suggest the invention as set forth in claims 1-13, and therefore the rejection under 35 U.S.C. §102(e) should be withdrawn.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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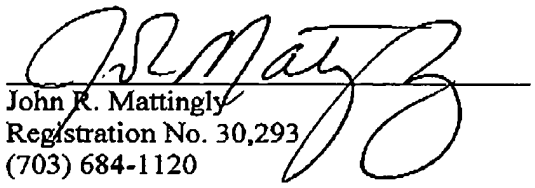

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